



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,518	11/21/2001	Jeffrey Harold Yanof	PKR 2 0718	3075
38107	7590	05/15/2007	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			ROY, BAISAKHI	
595 MINER ROAD			ART UNIT	PAPER NUMBER
CLEVELAND, OH 44143			3737	
MAIL DATE		DELIVERY MODE		
05/15/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/990,518	YANOF ET AL.	
	Examiner	Art Unit	
	Baisakhi Roy	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 March 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-18 and 20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-5 and 20 have been considered but are moot in view of the new ground(s) of rejection with respect to the added limitation of the thicker slices to have a thickness which is n times the first thickness, **where n is an integer.**

Applicant's arguments with respect to claims 6-18 have been fully considered but they are not persuasive. With respect to obtaining contiguous slices, Horiuchi clearly states obtaining contiguous slices or a contiguous scan of the entire lung with thick and thin slices (col. 1 lines 43-49, col. 6 lines 61-67, col. 7 lines 28-30). Horiuchi also clearly teaches obtaining 7-mm and 3-mm slices in parallel and then these thin slices are combined to form the thicker 10-mm slices (col. 7 lines 1-9). The claim is directed to combining thin slices to form thicker slices and the reference is directed to meeting this limitation. Furthermore, Horiuchi teaches obtaining a plurality of tomographic images of the 10-mm slices representing a plurality of slices which are contiguous in the slice thickness direction and images corresponding to the 7- and 3-mm slices (col. 7 lines 28-35). Therefore images representing the thinner 7- and 3-mm slices are combined to generate images representing the thicker 10-mm slices. Therefore previous rejection is maintained and repeated below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3737

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi in view of Lonn (5241576) and further in view of Wood et al.

Horiuchi discloses a radiation tomography system and method which obtains a plurality of varying thickness image slices including thin slices and combining said slices into thicker slices or combination of the thin and thick slices into thicker slices (fig. 6, 7, col. 7-8). Horiuchi teaches obtaining 7-mm and 3-mm slices and combining the slices to form 10-mm slices. Therefore the projection data sets for the two slices are added for each scan location and the same views in individual projection data sets are added. This addition generates projection data corresponding to the slice thickness of the combined two slices. The slices are displayed by the display device 68, which displays the plurality of tomographic images representing the 10-mm slices, the 3 and 7-mm slices.

Horiuchi teaches obtaining thicker 10-mm slices from the combination of thinner 3- and 7-mm slices and also teaches obtaining slices of varying thickness but does not explicitly teach obtaining thicker slices to have a thickness which is n times the first thickness, **where n is an integer**. In the same field of endeavor Lonn discloses a CT system and method directed to processing image slices of varying thickness where thin 1 mm slices are summed to form 4 mm thick slices (col. 3 lines 32-39) and therefore the thickness of the thick slice is a multiple of the thickness of the thin slice. It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Lonn to

modify the teaching by Horiuchi for the purpose of obtaining variable thickness slices and obtaining a desired number of images (col. 7 lines 49-53).

Horiuchi teaches displaying the images and slices but does not explicitly teach the use of multiple view ports. In the same field of endeavor Wood et al. teach a diagnostic medical imaging system and method to generate 2D image slices, data processor to combine said slices into a volumetric image, storage device for loading the image slices, and displaying said slices in various view ports such that the first image slices are displayed in a second view port, the second image slices are viewed in first view port, and a third view port containing a superimposed version containing relative locations of both first and second image slices as represented in the second and first view ports, respectively ([0043] [0046] [0055]). Wood et al. also teach obtaining thick slices with the use of the thick slice button [0064]. Wood et al. teach designating regions of interest by a reviewer ([0044] [0046-0047]). Wood et al. teach obtaining the images from a coronal, saggital, or multi-planar view ([0045]). The reference also teaches updating the display of the various view ports in response to changes made to one view port ([0046] [0088] [0091], claims 7-14). Wood et al. also teach detecting small objects or lesions on a particular slice, marking or projecting outlines of said objects, and highlighting or color coding to distinguish between objects ([0047] [0051-0055] [0060] [0065] [0095]). The multiple view ports in Wood can be used to display the thin slices, the thick slices, and then the combined slices. It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Wood et al. to modify the teaching by Horiuchi for the purpose of effectively displaying the slices of varying thickness in

multiple view ports in one display and optimizing the speed and accuracy with which the end user can diagnose a case (Wood [0016]).

3. Claims 6-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi in view of Wood et al. Horiuchi discloses a radiation tomography system and method which obtains a plurality of varying thickness image slices including thin slices and combining said slices into thicker slices or combination of the thin and thick slices into thicker slices (fig. 6, 7, col. 7-8). Horiuchi teaches obtaining 7-mm and 3-mm slices and combining the slices to form 10-mm slices. Therefore the projection data sets for the two slices are added for each scan location and the same views in individual projection data sets are added. This addition generates projection data corresponding to the slice thickness of the combined two slices. The slices are displayed by the display device 68, which displays the plurality of tomographic images representing the 10-mm slices, the 3 and 7-mm slices.

Horiuchi teaches displaying the images and slices but does not explicitly teach the use of multiple view ports. In the same field of endeavor Wood et al. teach a diagnostic medical imaging system and method to generate 2D image slices, data processor to combine said slices into a volumetric image, storage device for loading the image slices, and displaying said slices in various view ports such that the first image slices are displayed in a second view port, the second image slices are viewed in first view port, and a third view port containing a superimposed version containing relative locations of both first and second image slices as represented in the second and first view ports, respectively ([0043] [0046] [0055]). Wood et al. also teach obtaining thick

Art Unit: 3737

slices with the use of the thick slicebutton [0064]. Wood et al. teach designating regions of interest by a reviewer ([0044] [0046-0047]). Wood et al. teach obtaining the images from a coronal, saggital, or multi-planar view ([0045]). The reference also teaches updating the display of the various view ports in response to changes made to one view port ([0046] [0088] [0091], claims 7-14). Wood et al. also teach detecting small objects or lesions on a particular slice, marking or projecting outlines of said objects, and highlighting or color coding to distinguish between objects ([0047] [0051-0055] [0060] [0065] [0095]). The multiple view ports in Wood can be used to display the thin slices, the thick slices, and then the combined slices. It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Wood et al. to modify the teaching by Horiuchi for the purpose of effectively displaying the slices of varying thickness in multiple view ports in one display and optimizing the speed and accuracy with which the end user can diagnose a case (Wood [0016]).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baisakhi Roy whose telephone number is 571-272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BR

BR


BRIAN L. CASLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700